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| **Problem solving** | **Reasoning** | **Communication** | **Representation** | **Connection** |
| What information do you know?  What do you have to find?  What other information do you need?  What information is extra?  Does your solution answer the question?  What other questions can you answer with this information?  What did you learn from this problem?  Did you figure out a short cut while working this problem?  Estimate the answer.  Is this similar to another problem you have worked before today?  How is it the same as (different from) the other problem?  What operation(s) is(are) involved? How do you know?  What strategy could (did) you apply?  The answer is correct; tell us how you got that.  Does anyone have a different way to work the problem?  Are both methods viable ways to work the problem?  Does the representation of the problem lead you in a certain direction for finding the solution?  Which method is more easily understood? More concise (direct)? More efficient? Faster?  Make a problem using this procedure (skill, theorem, etc. ) so that the answer is\_\_\_.  Pose a problem that can be answered using the diagram (given information, graph, table).  Is there a pattern? | What is the purpose of doing\_\_\_?  Why did you decide to \_\_?  Make a conjecture (prediction) for this situation. Why is that valid?  What facts led you that conclusion?  Did you apply a theorem or postulate? Which one?  Is there a rule that corresponds to that step? What is it?  Can you change the order of your steps and still get the same answer?  Is the solution reasonable?  Generalize the pattern (information, data.)  True or false…why?  Do you agree with that? Why or why not? Analyze the mistake in this work.  Tell a counterexample for “\_\_\_\_”.  Find a contradiction in this thinking.  What two (three, four) facts do you have to have to conclude “\_\_\_”?  Which method of proof would you use to show that “\_\_\_\_”?  What would happen if\_\_\_?  How would\_\_change if\_\_? | Write a meaning for \_\_; say it out loud.  Does the solution (measurement, graph, diagram) require a unit (axis, legend, label)?  Interpret the solution (slope, y-intercept, rate) in context.  Tell (write) everything you know about the graph (equation.)  What is another way to ask “\_\_\_\_\_?”  Tell what the instructions (definitions) mean in your own words.  Do the statements “\_\_\_\_” and “\_\_\_\_\_” mean the same thing? Why or why not?  Say “\_\_” without using the word “\_\_.”  Say “\_\_\_\_\_\_” more concisely.  Add something to this to make it better describe the graph (diagram, process, shape.)  Refine the definition. (Does it place the term in a set, tell how it’s different from other things in the set, and is the statement reversible?)  What does the symbol (notation) mean? Write the statement using symbols.  Tell your neighbor how you did this?  Explain this process to your parent (sibling, a person in the \_\_th grade).  Comment on that procedure (method, solution).  Which is more clearly stated, “\_\_\_” or “\_\_\_”?  When is it better say “\_\_\_” than “\_\_\_\_”?  Describe the pattern (figure, graph).  What does the error message mean?  How can you write what the calculator shows? | Show how the two numbers (expressions) are equal.  Show how you can change one expression (equation) to the other.  Show this information with a different representation.  Do the representations correspond? How do you know? (graph and equation, table and graph, given and markings, words and equation, etc.)  Show a visual representation of the solution.  Model the problem with physical objects.  Is there a way to use technology to \_\_\_\_? How?  Is use of technology appropriate for this? Why or why not?  Which data display would best show \_\_\_ (aspect of the data)?  Find a mathematical model for the data (information, graph, table).  Does portraying this information in a different manner help you begin to solve the problem?  What is different on these graphs (equations, tables)?  Use terms or phrases to describe the characteristics of the graph(diagram, equation). | Find this skill on the When are we ever going to have to use this chart.  Who might need this information?  What career might require this skill?  Have you seen a chart (table, graph, map) like this in science (history, another discipline)?  How is this important to architecture (construction, design, art)?  How is this method similar to/different from the method we used earlier today (yesterday, last week)?  What previously learned skills are you using for this new process?  How are \_\_\_\_and \_\_\_\_\_ related?  Compare/contrast \_\_\_ and \_\_\_.  When was the first experience you had with \_\_\_?  How do you change\_\_\_to get\_\_\_? |